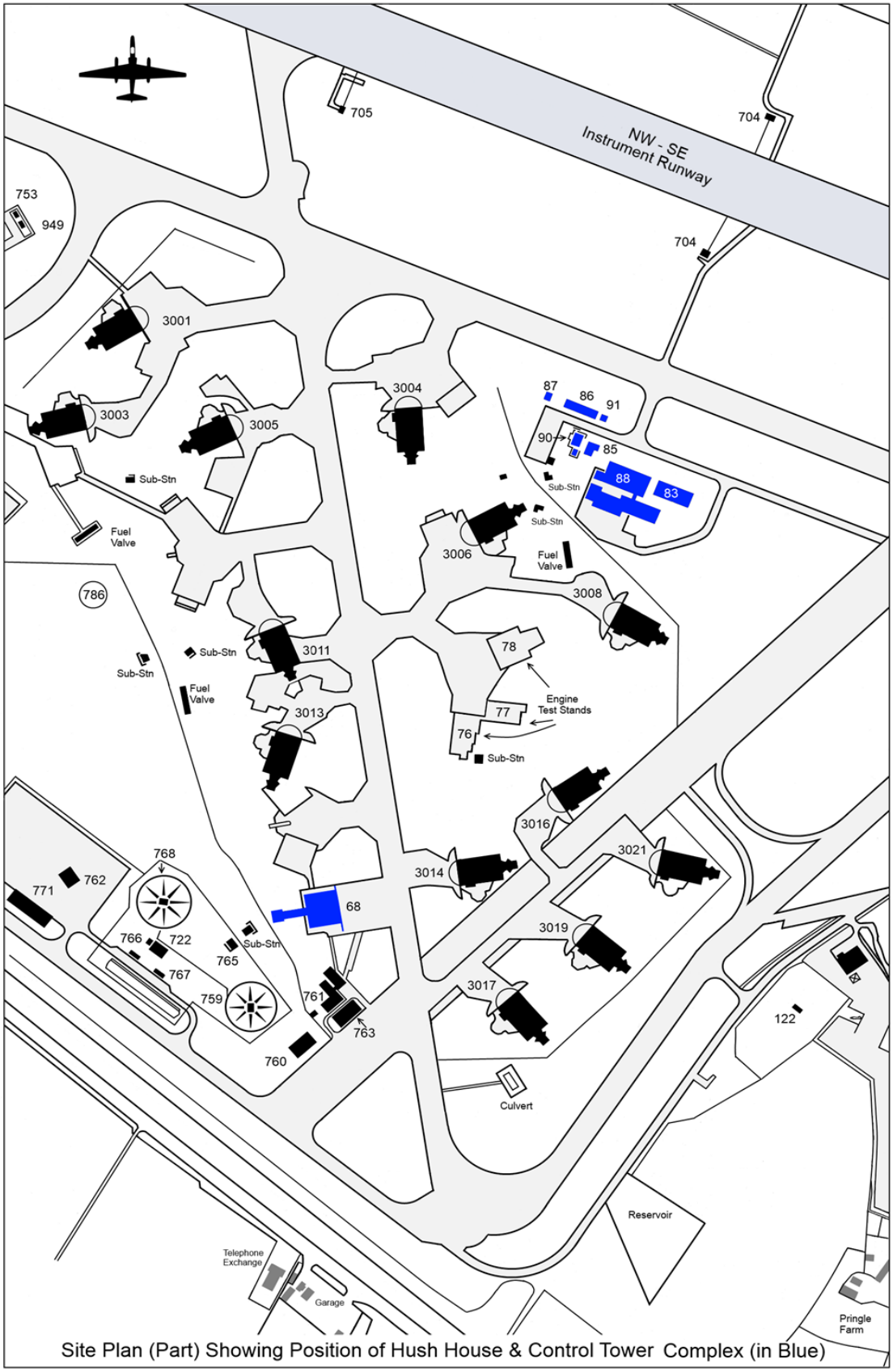
Airfield Research Group Ltd

ARG Research Note No.27: RAF Alconbury - A Record Survey of the Hush House and Control Tower

Paul Francis and Paul Bellamy – July 2015



Site Plan (Part) Showing Position of Hush House & Control Tower Complex (in Blue)

Plate2: Site plan

Contents

The Report

This report is primarily a Level 3 study of the Hush House (building 68) and the Control Tower (building 90) but by way of completeness, it also includes other buildings within the control tower complex which were part of the first post-war planning phase (1954 to 1964). It is based entirely on primary sources preserved by Urban and Civic as well as fieldwork which was carried out by Paul Francis and Paul Bellamy of the Airfield Research Group during July 2014.

Acknowledgements

John Anderson, Andy Brading, Nick Calabrese, G Domizio, Hank Howard & Barry Smith

Part One: Building 68: Hush House (Sound Suppressor Support)

(a) Introduction

The hush house is designed to reduce the environmental impact on the surrounding area by reducing the sound created by a running engine. It also provided an environmentally controlled acoustical control room for the test operators to work in during engine operation.

(b) Building 68

From an operational point of view, building 68 was not actually classed as a building, it was a facility or a piece of equipment. It was manufactured in America by Vital Link or one of its predecessors, this particular building dates to c.1986 and its designation is USAF A/F37T-10 and was type rated for F-4, F-5 and A-10 aircraft. Roughly 150 units have been made and installed at USAF bases world-wide. Prior to this aircraft engines were run on open test stands incorporating a pair of aircraft 'Y' hardstanding just north of the hush house at TL 20499 76391 (76), TL 20532 76410 (77), and TL 20538 76466 (78) (see map). Unfortunately, it was not possible to inspect these sites owing to them being covered in containers.

The basic design of the hush house, may be older than 1986, but it is unclear exactly how old and may even date from the 1970s. It was designed primarily for military fighter aircraft and provided an enclosed, acoustically treated environment to run various aircraft types either with engines installed or to test un-installed engines which were coupled up to a moveable test stand mounted on rails. It was possible to restrain a whole aircraft while the engine was run through its full performance test to enable performance issues to be identified and corrected. Various aircraft systems could also be checked while the engine was running. Adjacent to the building on the north side is a shallow concrete bunded 5,000-gallon fuel tank enclosure (now minus fuel tank).

The hush house has been built on a green field site, the only structure that existed and still exists on this site is the route of the underground fuel pipe line that runs to POL Site No.3 (NATO South). An inspection chamber can be found on the apron in front of the hangar. The apron and floor slab were both constructed by Amey Roadstone Ltd, it was laid using metric dimensions but the hush house was designed in imperial units. The apron between the floor slab and the existing taxiway is laid out as grid consisting of a series of 7 by 9 concrete squares (each one 4.6 by 4.7m) and 1 by 9 (each one 4.6m square) bays located against a drain gully.

The structure consists of a 6-bay all-steel blister-shaped hangar-like building with a large door gantry running along and projecting out from the front elevation. Electrically operated main doors are in two leaves and run on rails, the chain-driven motors being located within a compartment at the bottom of the doors. The substantial lattice girder of the door gantry appears to be over engineered but is designed to resist the vacuum caused by an operating gas turbine engine. The rear of the hush house has a long projecting 13ft diameter detuner which is 79ft 6in long and this terminates at a concrete and steel exhaust deflector (8ft 9in by 21ft 2in). This is accessed from inside the building by roller shutters. Interior cladding is of metal perforated and insulated acoustic panels and the exterior is painted corrugated sheeting.

The main structural arches which are in two sections spring from ground level and these can be seen externally, projecting out from the annexes. They are supported by 13ft 7in high vertical columns allowing a clear span of 65ft 3in inside the building. Five bays are at 12ft centres and one at 22ft centres, making a total length inside of 84ft (main door to rear shutters). The uprights also form the interior support structure for the annexes and baffles etc. All of the structural components are part numbered (stencilled) but do not contain any other manufacturers details.

Running full length along both sides are the 13ft wide annexes, the central area of the southern one has a personnel entrance, control room within the large bay, a rear noise suppression baffle section (3-bays) and a front air entry baffle section (2-bays). The north annexe has an open plan switch room within the large bay and a similar arrangement for noise suppression and air entry baffles to the southern annexe. The noise suppression baffles have roller shutters while the air intake baffles are open. Fire suppression was achieved via a bank of HALON bottles lined up at the rear of the building (now missing) and these connect to outlet nozzles at ceiling level, fired from the control room. There was also a nose wheel lift and well set into the concrete surface but this has now been removed and the void concreted over but the control boxes are still in place on the north annexe wall. Much of the equipment was removed prior to closure and used as spares at Lakenheath.

The control room contains a control desk with parts missing and wall mounted fire control panel.

- NGR: TL 20375 76231 (68)

Plate 3: A distant view of the hush house looking north showing the detuner and exhaust deflector, the east annexe with 3-bay noise suppressor, 2-bay inlet section and the main hangar with its projecting door gantry (Blg.68)

Plate 4: Hush house front and side view (Blg.68)

Plate 5: Rear view showing the exhaust deflector (Blg.68)

Plate 6: Interior view looking towards the detuner (Blg.68)

Plate 7: Air inlet straighteners inside the east annexe (Blg.68)

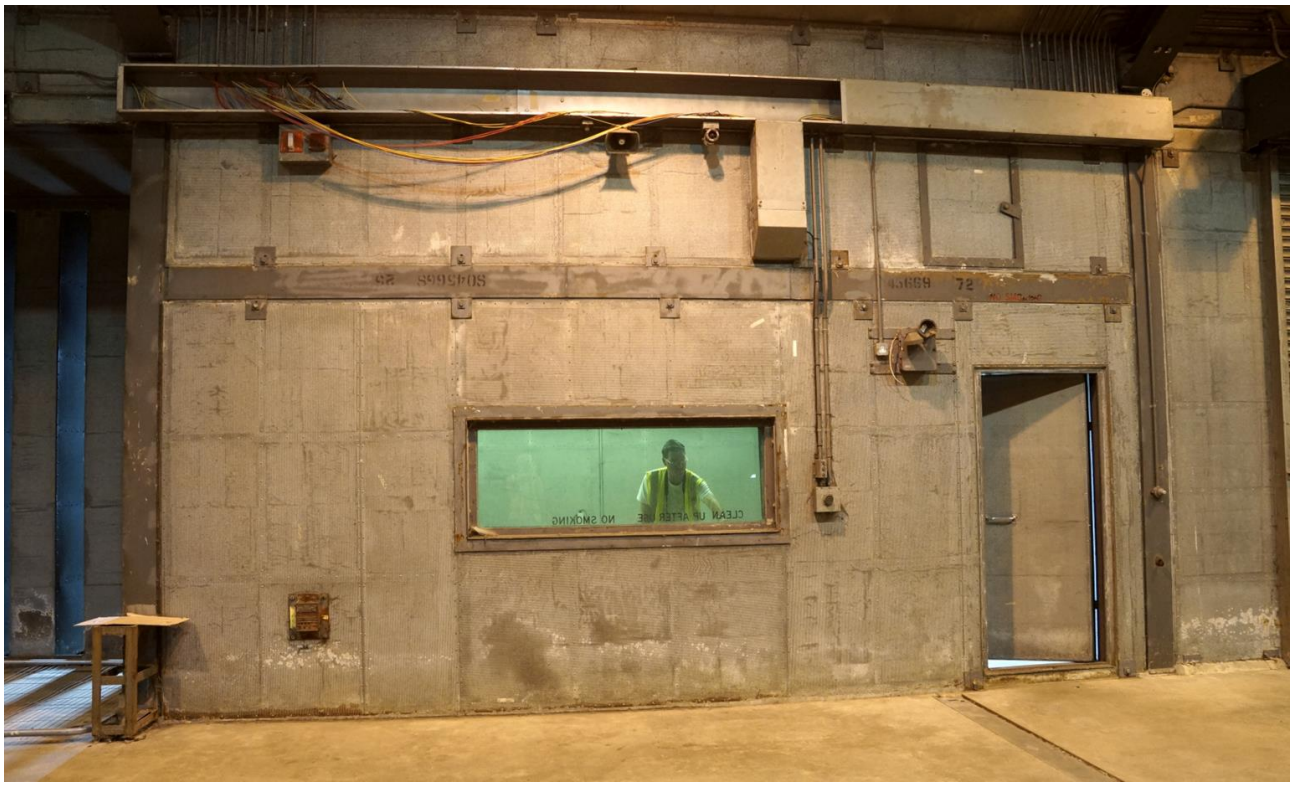
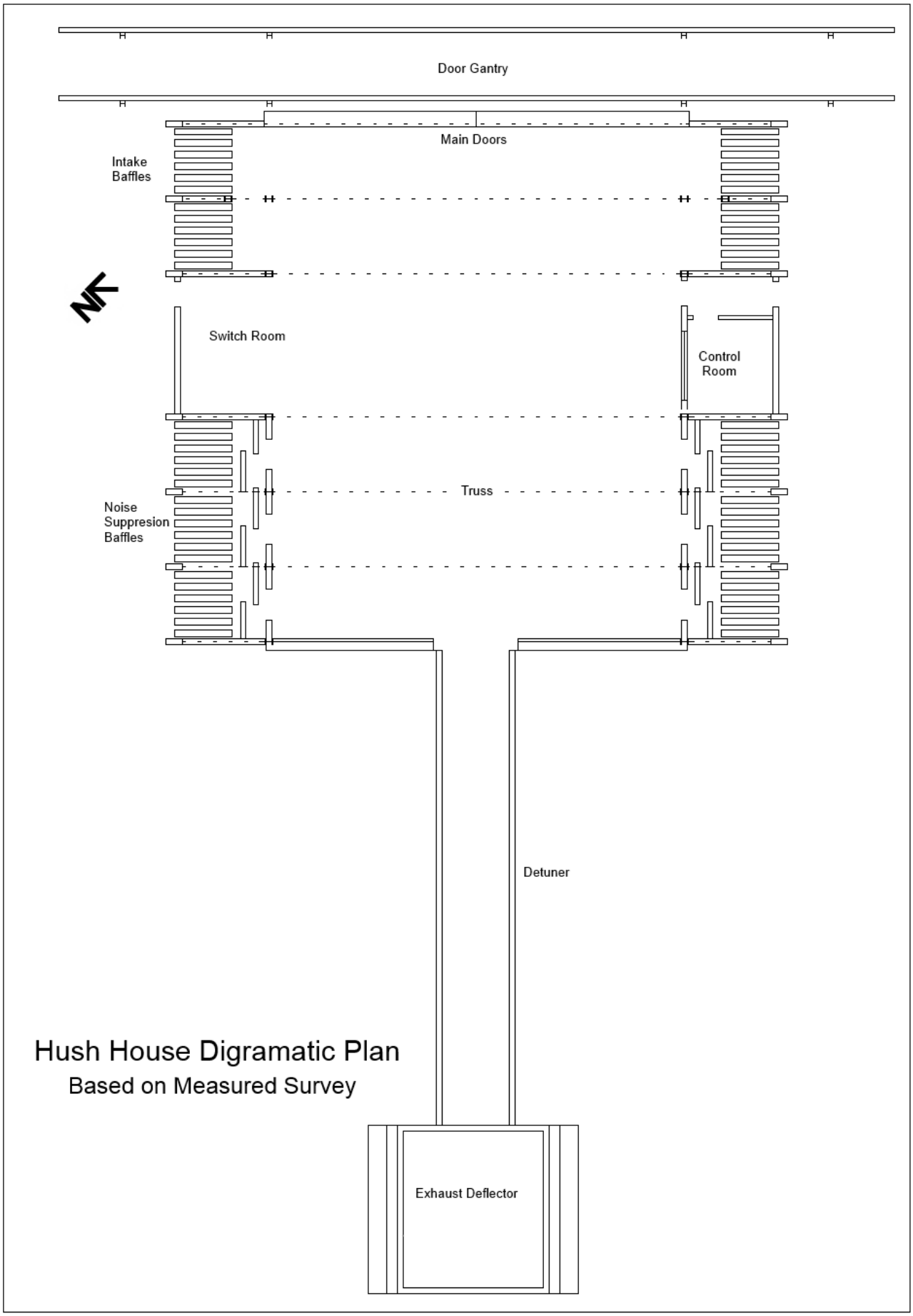


Plate 8: Interior of control room (Blg.68)

Plate 9: Exterior of the control room (Blg.68)



Hush House Digramatic Plan

Based on Measured Survey

Part Two: Control Tower Complex

2.1 Background

Between 1938 and 1940 the airfield had a grass surface, hard runways were laid between 1940 and 1942, (06-24, 12-30 and 01-19) each of these being 150ft wide and were constructed in 8 in concrete laid on 4in sand and gravel. A 50ft wide perimeter track linked with the runway ends was also constructed in 6in concrete, which were laid directly onto the natural foundation. After this followed two separate periods of resurfacing work between 1944 and 1945.

During a period of closure, immediately after the end of the Second World War, major reconstruction works were carried out between 1953 and 1954 involving Runway 12-30. It was firstly extended eastwards to a total length of 8,000ft in 1in rolled asphalt wearing course on a 3in bitumen macadam base course which in turn was laid on 8in pavement quality concrete over 4in rolled dry-lean concrete. Secondly the existing runway was strengthened with an overlay of 1in rolled asphalt wearing course over a 3in bitumen macadam base course which was also laid above a 2.5in tarmacadam regulating course.

A new 75ft wide southern and southern-link taxiways were also constructed running parallel to the new runway extension and parallel to the old runway section.

Between 1955 and 1956 Runway 12-30 was extended further eastwards to its present length of 9,000ft and widened from 150ft to 200ft which was achieved in 16in pavement quality concrete on 4in of rolled dry-lean concrete. Twenty pairs of Y-standings were also constructed in 8in pavement quality concrete twin slab construction.

Against this background of reconstruction, from 1954 to 1957 an airfield management complex of buildings was designed and built, on the southern side of the southern taxiway, roughly in the centre between the former 06-24 and 01-19 runways. The new control tower was the fourth building used for air traffic control purposes at Alconbury and until very recently, all four were extant.

The 1943 standard watch office which was located on the 'live side' was demolished a few months ago. This leaves the scatter field building of c.1939 which was removed between 1946 and 1950 and re-erected on Pringle Farm, Little Stukeley (NGR: TL20834 75886) - at the time that the farm regained use of its requisitioned land. The other is the grade 2 listed building of c.1941.

Apart from the weather tower, the post-war control tower complex survives in 2014, more or less as-built, although the buildings are tired and in disrepair.

Plate 11: The scatter field watch office which is also the original watch office erected at Wyton, it was dismantled from there and re-erected at Alconbury c.1939. It is seen here in 2012 on Pringle Farm.

Plate 12: The much altered third watch office building, as seen in 2012. Note that despite its external appearance, inside the rooms looked just as they did during WWII.

2.2 Building 83: Fire Truck Maintenance Building

This is a much modified 5-bay Butler Shed, an American prefabricated storage and workshop building designed in 1950 by the Butler Manufacturing Company of Kansas. It was referred to locally as the 'Butler Barn', during the 1970s it was used as for storage and truck maintenance, it contained the following:

- Tanker foam stocks
- F-6 Runway Foam trailer
- Spare air bottles trailer
- Fire truck maintenance bay
- Air cascade unit
- 1,500-gallon water distributor

It consists of a steel rigid portal frame made of tapered plate steel stanchions and tapering roof beams at 20ft centres. This version of c.1956 is a side opening shed, originally having sets of full height doors, one per bay and this elevation faces north onto a paved area. Before 1986 an internal perimeter wall was built of concrete block and a pair of bays was separated from the others by a concrete block wall. The main doors of these two bays were removed and blocked up and the others were removed and replaced. After 1986, the original exterior cladding was removed and replaced with Robertson's Trisomat composite panels. Also removed were louvred panels and a pair of windows on the end elevations.

- NGR: TL 20683 76606 (83)

Plate 13: Building 83 as it looked c.1969 (83). Photo: Hank Howard

Plate 14: front elevation (Blg.83)

Plate 15: A view looking north-west (Blg.83)

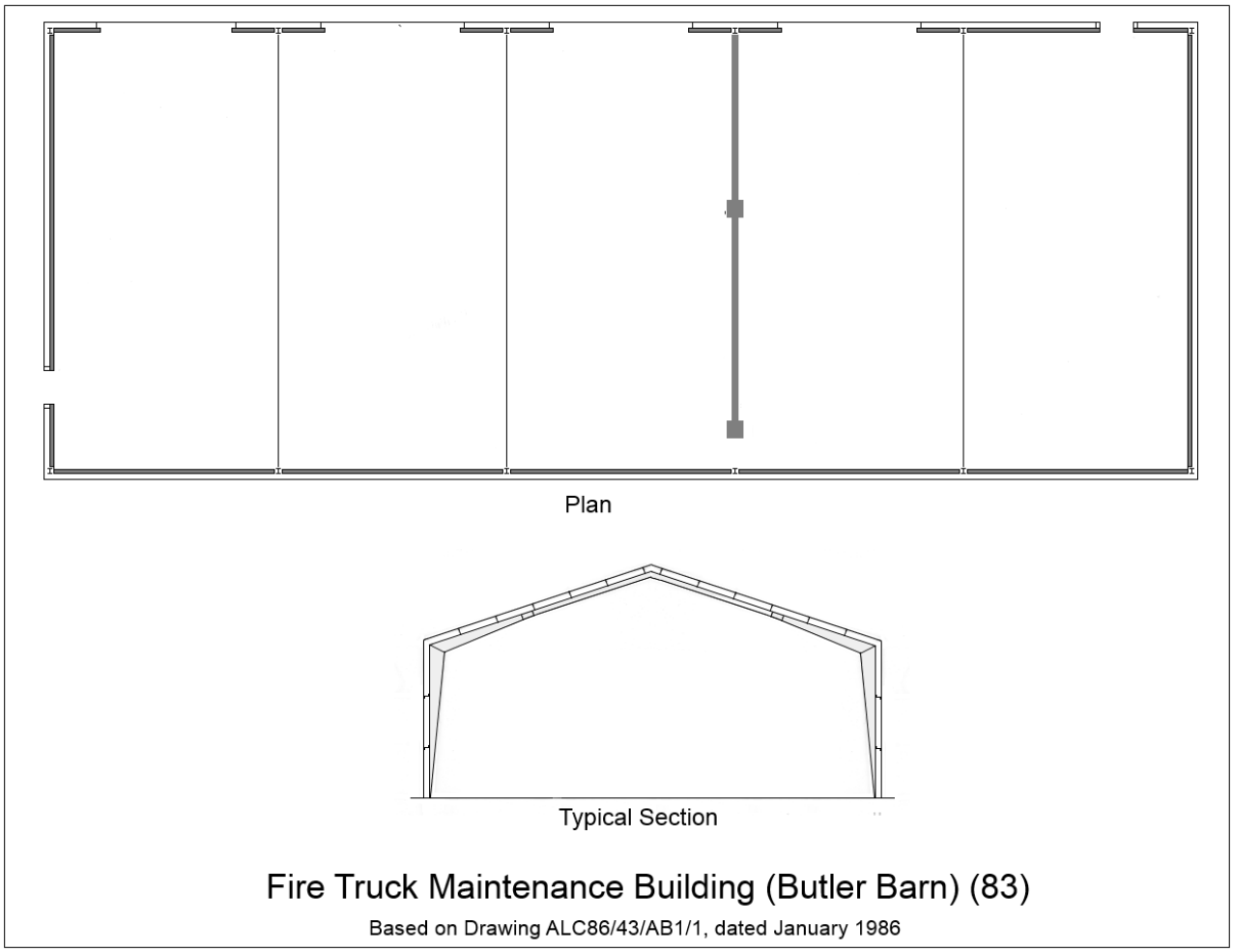


Plate 16: Plan and section (Blg.83)

2.3 Building 86: Base Operations Building

(a) Introduction

The base operations building is a standard 24ft span, 8-bay Uni-Seco Mark 2 hut, it is aligned E-W, with its front elevation facing south – it is similar to the third most common type of temporary houses (29,000 built) that were erected from 1944 to 1947 in major towns and cities of the UK. Uni-Seco huts were also erected in large numbers post-WWII on RAF stations, with Alconbury having more than most. It is assumed that the building was erected c.1956 and designed by Oliver Law and Partners.

(b) Description

Today, building 86, has a single door located in the east gable end, but the main external doors are as follows. There are two entrances with double doors, one to a small plant room where the central heating pipes arrive from the fire crash station plant room, the other being the main entrance. This leads to a lobby area and a short central corridor which gives access to eight rooms including toilets while access to a further three rooms was through others (previously mentioned). Originally built as the base operations building, its function was the recording and control of local operations with regard to providing a weather service, flight clearance and general airfield administration and recording of aircraft movements. From here, flight information and all movements from take-off to landing was passed by teleprinter to Detachment 1, 7370th Flight Service Squadron based at Uxbridge for compiling and digesting.

(c) Construction

Uni-Seco buildings consist of a series of standardised columns, beams and panels assembled into a grid pattern of 4ft by 3ft 6in units. The principle materials are timber / plywood, asbestos cement sheeting and wood-wool. Timber columns are erected at 12ft centres and these are connected in opposite pairs by timber and asbestos cement roof beams, sloped above to give provide a series of low pitch trusses. These are connected by secondary spars carrying slabs covered by roofing felt. Roof and wall panels consist of light frames of softwood covered on both sides with asbestos cement sheets and the void is filled with wood wool. Windows are multi-pane galvanised steel casements (normally six per bay), while end walls are blind.

The external walls of the teleprint and weather office rooms have collapsed, but the rest of the building is extant. The room arrangement is piratically as-built apart from a cupboard being converted into a lady's toilet. The original external paint scheme was white.

- NGR: TL 20602 76662 (86)

Plate 17: Base Operations, a view looking east (Blg.86)

Plate 18: Window detail (Blg.86)

Plate 19: Base operations building, the sign refers to the building as Air Traffic Control & Landing Systems Maintenance (Blg.86)

Plate 20: Base operations observers' room (Blg.86)

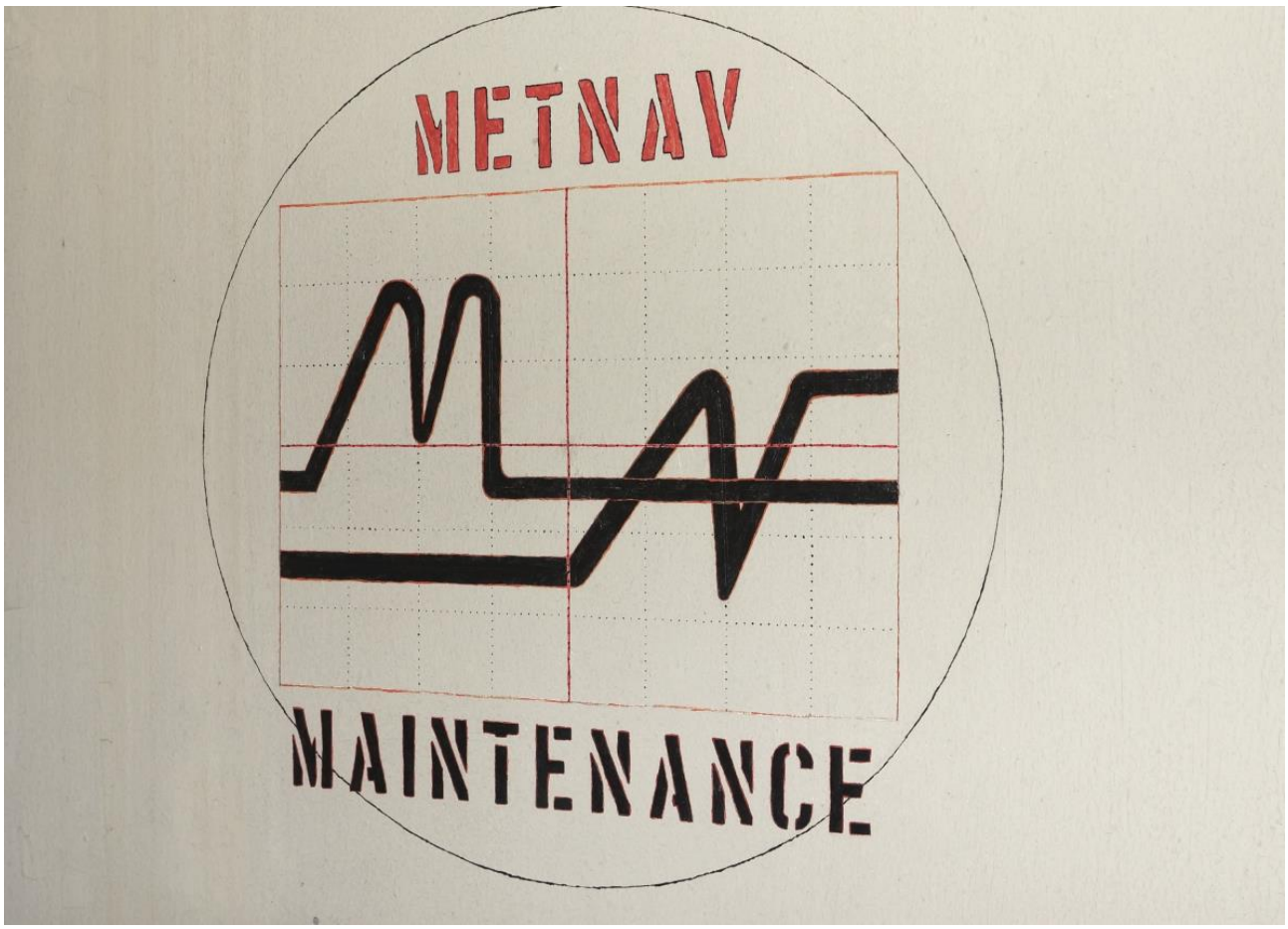


Plate 21: Base operations building artwork (Blg.86)

Plate 22: Base operations forecast room (Blg.86)

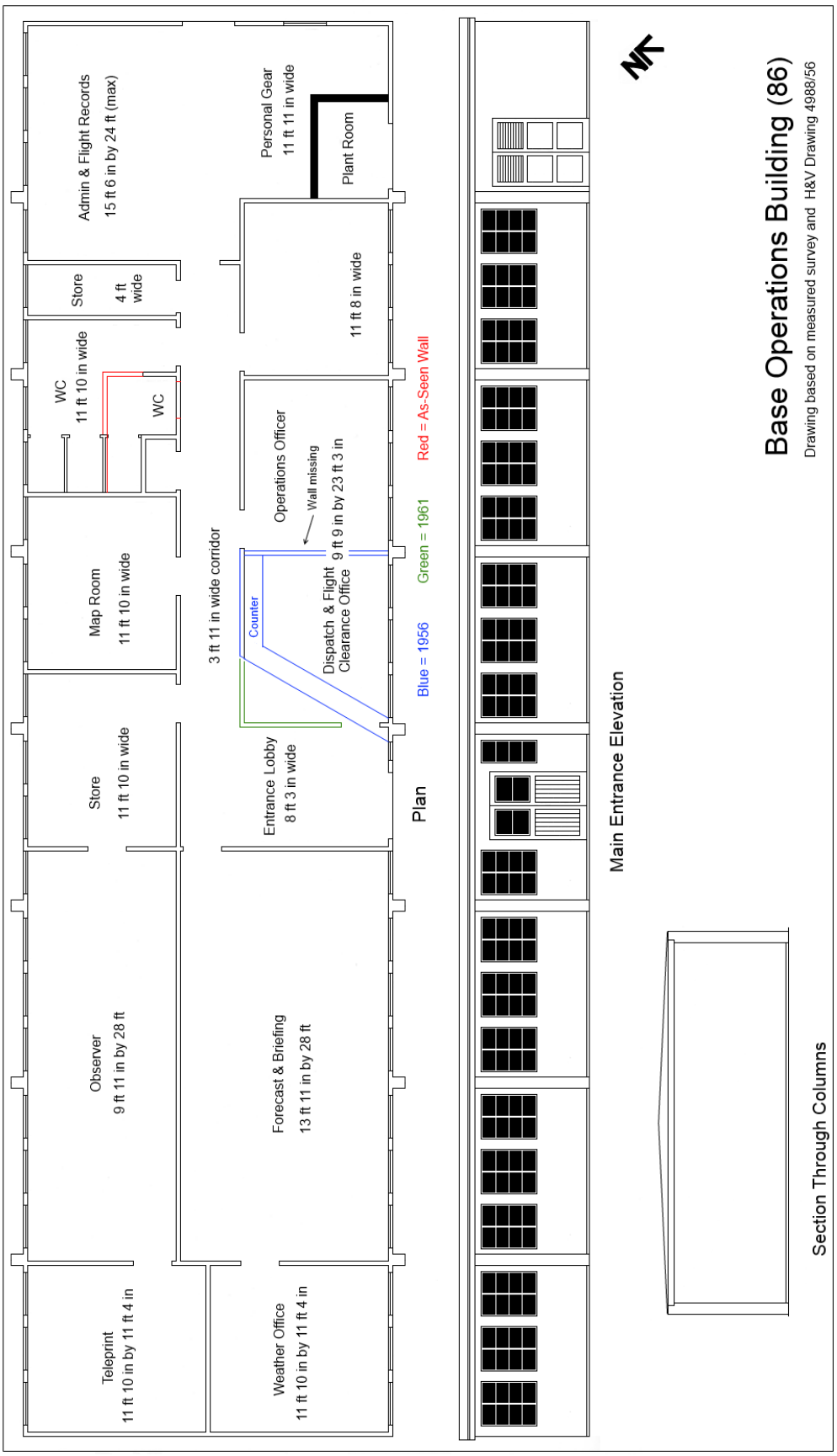


Plate 23: Plan and elevation (Blg.86)

2.4 Building 85: Administration Offices

This is not the original building 85, that used to be a timber hut erected c.1957 which was probably located on the same site as the new building (there are exposed screws or studs set into the floor slab along the southern end of the building). The new building dates from 1963, it originally had a rectangular shaped plan form but has an extension built against the east side elevation, giving it an 'L' shape in plan. There used to be a dividing wall, but this has since been removed and the older part of the building is arranged open plan with a row of wooden cupboards at the northern end.

It is constructed of 11in cavity brick with steel multi-pane windows. External doors are located in the end elevations. The roof is probably of timber construction with a shallow pitch, boarded and felted.

Outside, close to the southern gable wall are several concrete blocks at ground level with steel eyes plus the remains of a 1ft 4in diameter timber aerial mast.

The original building measures 18ft 8in by 35ft 6in internally and the extension is 11ft by 11ft 8in.

- NGR: TL 20608 76647 (85)

Plate 24: Administration offices (Blg.85)

2.5 Building 87: Balloon Filling Hut

(a) Introduction

Designed by Oliver Law and Partners in January 1955, to Drawing 3512/55, the hydrogen balloon store has a rectangular shaped plan form, it faces eastwards and is subdivided into two unequal parts. The larger room is a balloon filling room and the other is the hydrogen store.

(b) Construction

The building is surrounded by a concrete path and the internal floor is raised above this. External facing walls are cement rendered 9in brick (English bond) while all internal walls are fair face, the subdividing wall is also 9in brick. Two barred windows are provided in the filling room, one on the west elevation and the other on the south elevation. The store is vented only. The roof is 4in concrete slab that over hangs slightly, there are no rainwater goods, relying instead on a coander slot. There used to be lightning rods at each corner of the roof which were connected to an earthing ring at ground level and buried electrodes, but these have been removed.

Both doors are on the east wall, the filling room having full width and height Esavian type 1032 folding timber doors, while the store has a vented steel frame and door supplied by AH Allen of Northampton, a steel stockholder still trading in the town.

- NGR: TL 20572 76695 (87)

Plate 25: Balloon filling hut (Blg.87)

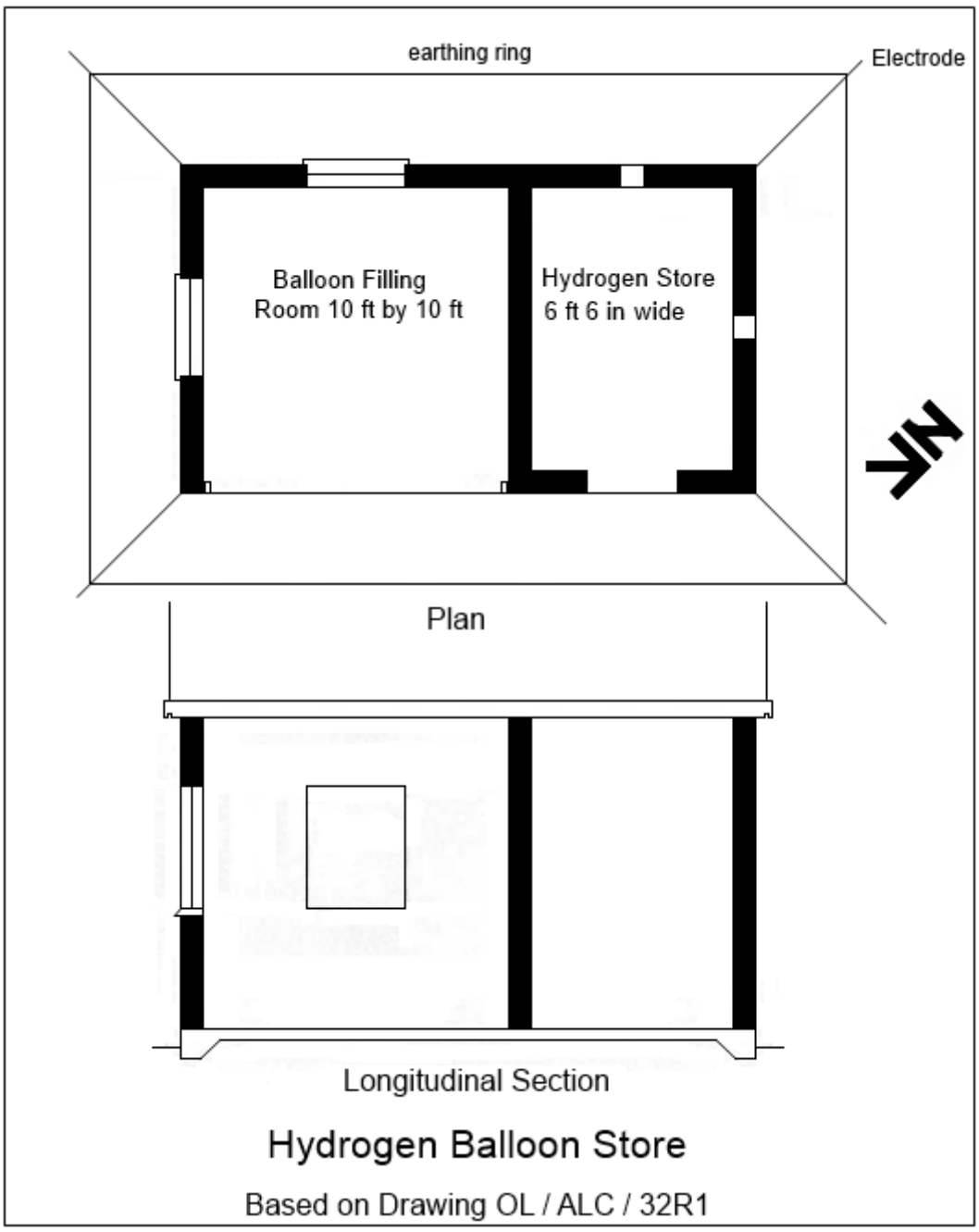


Plate 26: Plan and section (87)

2.6 Building 88: Standard Fire Crash Station

(a) Introduction

In September 1954, an in-house design for a fire crash station was prepared for a series of buildings to be built at four USAFE fighter airfields under construction (Alconbury, Bentwaters, Manston and Shepherds Grove). This was drawn by the Air Ministry architect, Archibald G Gillan (drawing 6257/54), its title being Type (USA) Seco Construction Standard 4-Stall Crash Fire Station. The use of Uni-Seco wall and roof panels was then rejected, despite Seco units being used in the construction of other contemporary buildings at Alconbury such as the control tower (90) and standard base operations building (86).

Another, similar drawing was prepared by contractors to drawing 4654/55, which had a near identical floor plan to the Gillan drawing but the method of construction was totally different. Design 4654/55 is one based on a pre-cast concrete post and panel arrangement supplied by Unity Structures Ltd[1]. This was built facing a large servicing apron and a centrally located concrete twin slab road allowing easy access to the southern taxiway and beyond this to the runway. In later years the building was known as the flight line fire station.

(b) Construction

It is constructed of pre-cast reinforced concrete columns spaced at 3ft centres in the external walls, the walls are faced externally with specially coloured pre-cast concrete slabs and lined internally with clinker slabs separated by a 6in cavity. The external slabs are bolted to the columns using copper ties. Once tightened the slabs bed against a vertical damp-proof course on the external face of the columns, thus preventing the ingress of moisture through the vertical joints while horizontal joints are shaped to form a lapped joint. Once completed, all joints were pointed.

The roof consists of exposed double steel lattice angle-iron girders welded together by plates (Colvilles steel) over the taller parts and a pressed steel joist system (similar to that used in Unity houses) over the lower parts, it was originally clad with felted straw and timber roof slabs, but the appliance garage has been re-clad with Robertson's 'Trisomet' composite panel fixed to steel purlins.

(c) Internal Arrangement

As originally built, the building is single storey and had a rectangular-shaped plan-form. At this time it consisted of a tall 4-stall appliance garage, arranged open-plan which faces north and a lower 'L'-shaped annexe, arranged around the south and east elevations. Main doors are sliding and folding concertina types in each bay at one end only. The area behind the garage part (a fire brake wall separated the garage from the sleeping quarters) was a large dormitory (sleeping 32) and an office (sleeping 1), while the western annexe had a day and alert room, two offices and a dining room and kitchen. Behind this was a store, maintenance room, lobby and ablutions. The final room was a boiler house with a tall brick chimney stack, which served this building as well as

[1]The Unity building system is believed to be invented by the architect Frederick Gibbard (of Harlow Town fame), around 19,000 houses were built using this system in the mid to late 1950s.

the control tower and the base operations building, the connecting pipes between buildings being laid in underground ducts.

- NGR: TL 20637 76625 (88) (old garage)

(d) Extensions

Apart from a new boiler room extension, built against the existing one in temporary brick construction on the south elevation, the building largely remained in its 1955 form until after 1977.

After 1977, a small single storey brick-built annexe was added to the rear annexe on the west elevation, this contained a pair of offices. A detached concrete walled enclosure was also built on the western side (opposite the dining hall) containing a 7-kw diesel emergency generator. In February 1986, the architect Raymond C Price under contract to the Property Services Agency, not only completely altered the interior layout of the annexes, he also designed a new fire crash station, built as a link-detached building to the south of the original one. The dormitory was completely stripped, doorways bricked up and partitions added to create new offices, a technical services room, toilets, stores and classrooms. A new N-S corridor running full width gave access to an exercise room, equipment room and an alarm room, while opposite these was a re-vamped dining room and kitchen. The old boiler room extension, along with the original chimney stack were each demolished and the original boiler room was adapted as a recreation room. The new N-S corridor left the old building to connect with the main entrance lobby of the new building.

The new single storey building (which has the same building number as the original) is in three main parts and of two different roof heights:

- Fire truck garage
- West wing
- Central section / East wing

The main part rises above the others and consists of a tall open-plan 5-stall appliance garage which is south-facing (away from the runway). On the NW corner of the garage is a small projecting wing that functioned as an extinguisher maintenance facility (with clean room, store, compressor room and the main room). The central section has a south facing main entrance lobby with a large block paving apron at its front and an access road.

After the lobby, is the N-S corridor, a utility room and boiler room annexe on the west side while the NW corner has a switchroom. The follows the east wing and the whole of this is subdivided into three groups of four bedroom and WC units (a pair of opposite facing bedrooms share a lobby and toilet), with access from a central E-W corridor from the entrance lobby.

Construction of all parts is of an RSJ portal frame of two different heights, with stretcher bond brick / breeze block cavity exterior walls. Interior walls are thought to be concrete block.

- NGR: TL 20626 76597 (88) (new garage)

Plates 27 & 28: Two views of P-V crash trucks (Blg.88). Photos: G Domizio & John Anderson

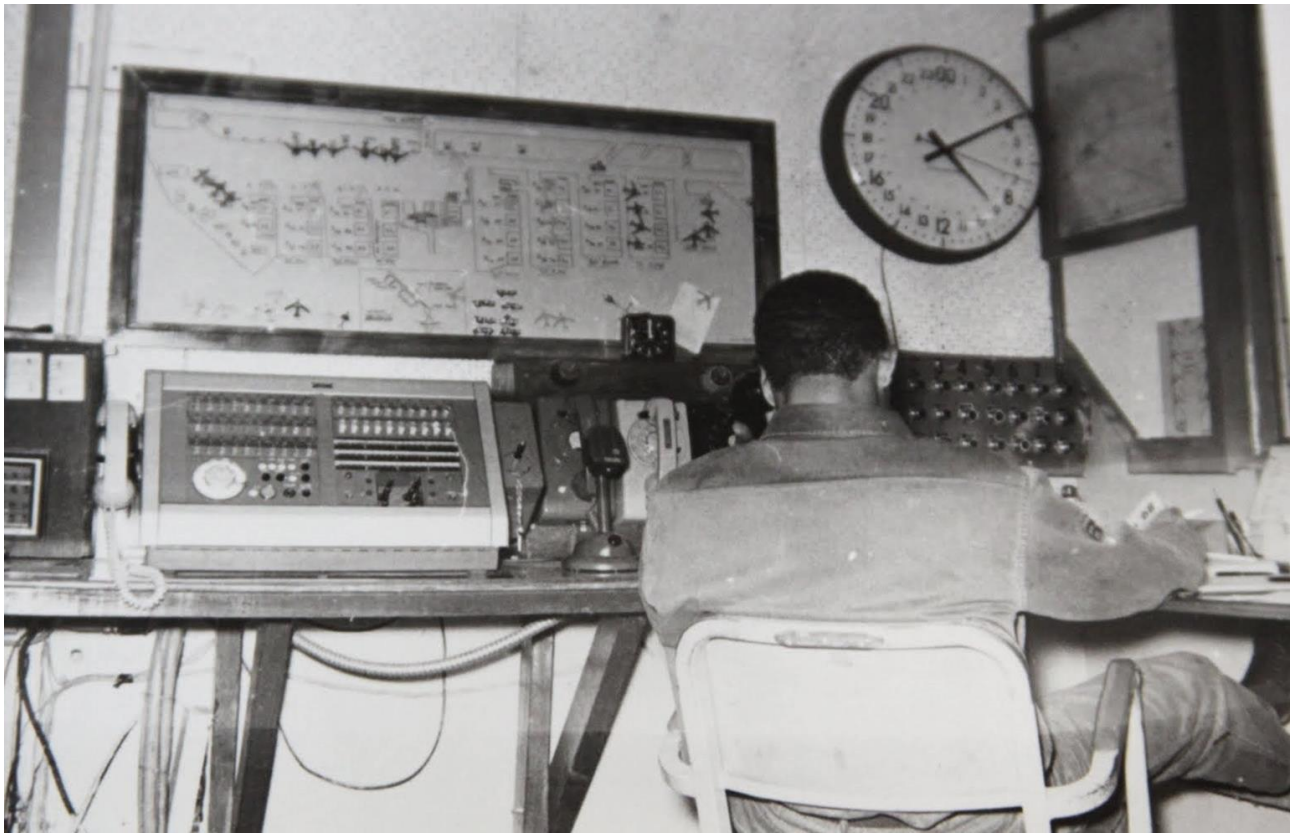


Plate 29: interior view of alert room c.1969 (Blg.88). Photo: Hank Howard

Plate 30: Fire trucks in action! Photo: Barry Smith

Plate 31: An early sign 1984 (sign dates to after 1962) (Blg.88). Photo: Nick Calabrese

Plate 32: A later version (Blg.88)

Plate 33: View looking west of the original fire station (Blg.88)

Plate 34: Front view of the garage part of the flight line fire station (Blg.88)

Plates 35 & 36: Two interior views of the original garage, note the lattice girder trusses (Blg.88)

Plate 37: Rear view of the original flight line fire station with office extension (Blg.88)

Plate 38: The new Flight line fire station garage. The annexe on the left is the fire extinguisher maintenance shop (Blg.88)

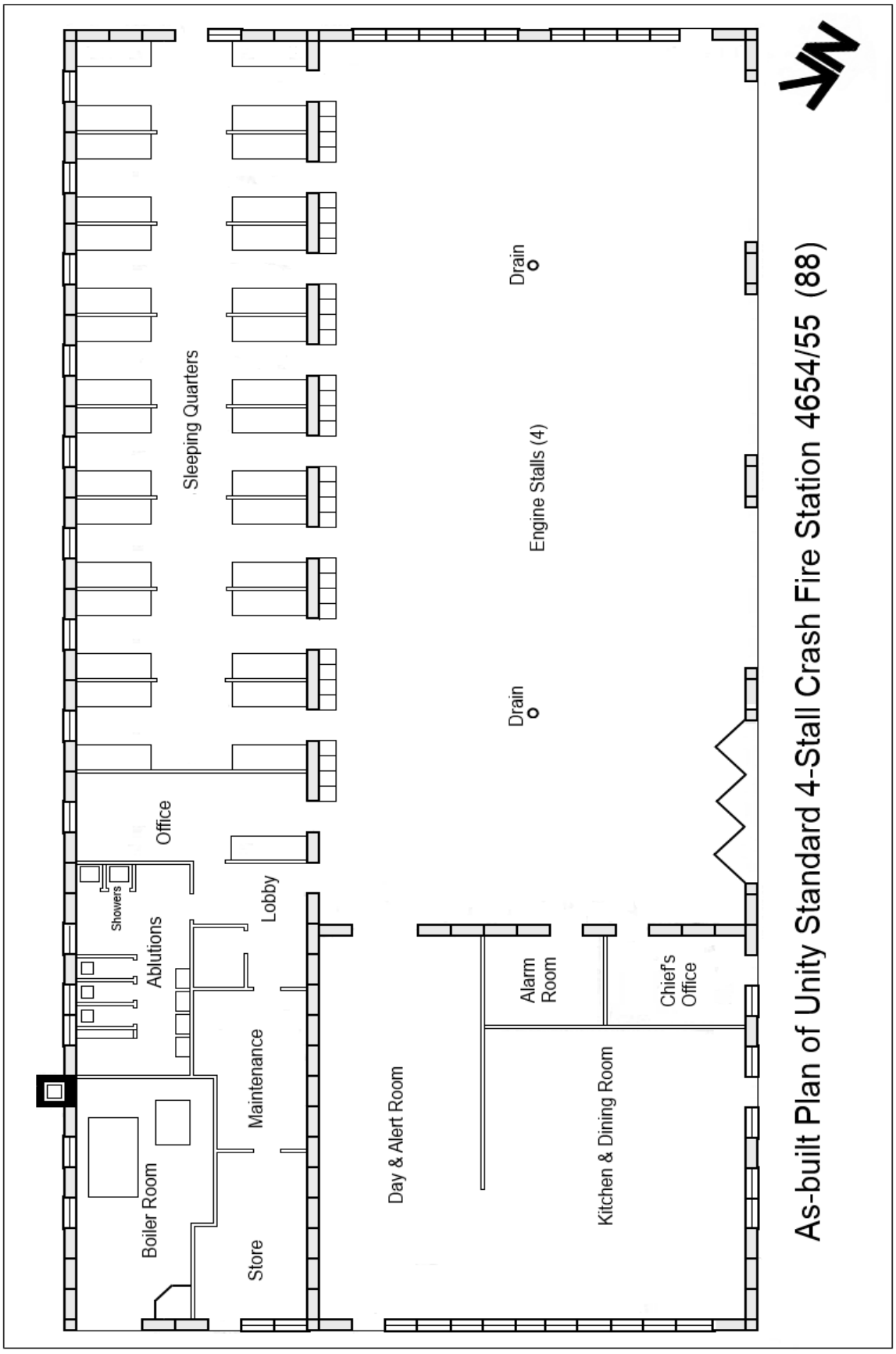


Plate 39: Plan (Blg.88)

2.7 Building 90: Base Operations – Control Tower

(a) Introduction

The control tower was completed and opened by 12 April 1957. The architect was Oliver Law & Partners and the original drawings are 2609/55 and 2610A/55. It is a smaller version of one built at Molesworth (a five-storey building to drawing 2307/54) – the main difference is that the base operations at Alconbury was a separate building (86) while at Molesworth, it was combined with the control tower. Another difference was that four floors were of a similar size to that of the ground floor of the Alconbury building and the Molesworth building was clad in brick. Both of these featured a standard control cabin that was also built above other contemporary control tower types. For these reasons, it is considered that the design for the Alconbury control tower was unique in the UK.

The building at Alconbury is aligned nominally N-S and faces the main instrument runway. It is part single but also rises to four storey height, the final storey being a cabin or visual control room. The tower is steel-framed, constructed of four primary stanchions of double RSJs (side to rear) and four intermediate RSJ stanchions of standard form. Horizontal RSJs support the light weight concrete slab floors. The stanchions were originally exposed internally but were later encased in asbestos sheeting. The as-built exterior cladding was Uni-Seco panels painted white fixed to battens with large steel windows. One large Uni-Seco panel on the south side of each floor was removable for installing equipment into the tower via a swivel hoist (which is also missing).

Plate 40: Control tower view looking east (Blg.90)

Plate 41: Control tower 1964 (90). The timber building is the original Building 85. Photo: Barry Smith

Operationally little is so far known about airfield movements and this is a line of enquiry that we are pursuing. The following is known:

In the period between November 1980 and October 1981 there were 15,960 aircraft movements. The six-month period between January and June 1983, saw 9,030 aircraft movements.

(b) Refurbishment

In 1975, the chartered architects Ruddle Wilkinson and Partners working for the Department of Environment, completed drawings to alter the external appearance of the tower part of the building and it is this refurbishment that can be seen today.

All external Uni-Seco panels were removed from around the tower, as were all metal window frames, the small third floor balcony was also removed. In place of the Uni-Seco units and windows are full height 'Luxalon'[2] type 605 sandwich panels which were fitted to angle irons at each floor level and the panels were painted a 'Laural' colour scheme. Window portholes were fitted at first floor only, the second and third floors being blind. A total of 13 glazed panels of the control cabin were also replaced at this time.

Inside and on all floors, the exposed RSJ stanchions were encased in asbestos sheeting to give a fire rating of 1 hour. The final modification, was the installation of a vertical steel emergency escape ladder to replace the moveable panels and balcony.

(c) Ground Floor

The ground floor has a rectangular-shaped plan form and consists of two equal size halves (nominally 20ft square), one of these is entirely single storey constructed of cement rendered temporary brick with internal piers, while the other is steel-framed which supports the tower and this is also clad with temporary brick. The single storey half of the building has cased steel beams supported by the brick piers and these in turn carry a light weight 4in concrete slab roof. This room functioned as a stand-by generator facility with two diesel engines fixed to concrete foundation slabs – the engines are now missing but a pair of starter and control panels are extant. The concrete floor in this room has ducting set into the floor slab for the electrical and oil feed pipes, while the engine air intakes are a series of six steel louvred panels, two on the east, south and west elevations. The exhaust ducting is also present.

The ground floor of the multi-storey part of the building functioned as the main entrance (located on the west side) and lobby with stairs, a small switch room and two other rooms, one for battery charging and the other functioned as the 'A' centre. The 'A' centre contained the airfield lighting control equipment, which enabled the air traffic controllers to have complete control over its operation and selection – the control panel for this is extant. Both of these rooms had metal windows set into timber frames on the north elevation.

Outside, during the 1970s a concrete cast in-situ 7ft high blast wall was erected around the

[2]Luxalong is a trade name of Hunter Douglas Ceilings of Northampton – 605 refers to 605 mm wide

building as well as the air conditioning plant and a bunded oil tank on the south side. Entrances were also traversed, most of this walled area is extant, except for a large section on the east side which was demolished around the time that the engines were taken out. The diesel oil tank is also extant within its 9in walled bund.

- NGR: TL 20600 76660 (90)

Plates 42 & 43: Two views taken in 2010 (without Heris fencing) (Blg.90)

Plate 44: Entrance lobby and stair. Aircon control panel on the right-hand wall (Blg.90)

Plate 45: Generator room – view looking towards the control panels (Blg.90)

Plates 46 & 47: 'A' Centre with control panel and Battery charging room (Blg.90)

(d) First Floor

The original function of the first floor is unknown, it was an open plan room with railings around an open stir well. In 1975, it became the machine room and contained part of the ventilation plenum chamber, the remaining half being erected above the roof of the generator house. There was originally a pair of metal windows set into timber frames on the north elevation but after 1975, these were replaced with four port holes along with new external cladding. The partition with the borrowed light seen in the photo, was added before 1975.

Plates 48 & 49: Two views showing ventilation plant at first floor level (Blg.90)

(e) Second Floor

This floor was divided into two equal unequal halves by Uni-Seco partitions into the stair well and landing forming one, the other half being the original ventilation plant room, the air intake for this being on the west wall. Around 1975, this plant was removed and it became the telephone exchange.

The north elevation originally had a pair of steel windows set into timber frames. Apart from the external cladding, this room remains as-built.

Plate 50: Second floor (Blg.90)

f) Third Floor

This floor was the equipment and junction room and in support of this the floor slab is twice as thick as other floors partly to incorporate a 4in deep electric cable ducting with heavy steel covers.

There is also a small toilet as well as the stairwell which on this floor only was originally encased in Uni-Seco partitions. All walls were lined with acoustic tiles, the north elevation originally had the same window arrangement as the lower floors, plus another one on the west and east elevations. There was also a small balcony on the south elevation with access from a moveable wall panel but this was removed in 1975.

Plate 51: Third floor (Blg.90)

(g) Fourth Floor

The final floor is the control room cabin. This is a second generation of what was later termed as a visual control room, other examples include Biggin Hill, Greenham Common, Molesworth, North Weald, Mildenhall and Upper Heyford. The contractor for the cabin is believed to be Richard Crittall & Co Ltd who supplied the component parts including the ventilation ducting around November 1956.

The floor consists of a hollow octagonal shaped concrete slab balcony (measuring 28ft 6in across flats) with 1in tubular steel railings around its perimeter, it is accessed from a 3ft 7in by 5ft door. The slab has downstand RSJs that are bolted to the tower's steel frame and the cabin is anchored to the balcony, being slightly larger than the tower that supports it. The balcony is 3ft 3in below the concrete slab floor of the cabin and the void within the vertical walls of the cabin, contain the supporting framework, ventilating ducting and conduits carrying electrical cables. The ceiling of the third floor (below the void) is carried on a pressed steel hangers hung from the supporting beams in the void.

Part of the vertical walls are inside the cabin and these contain tapered ducts that connect with the ventilating ducting in the void below. The 72.5 and 55.5-degree angled framework of the cabin is made from pressed steel columns which were originally clad on all sides with 'Insulate' double glazed units, the outer sheet being light blue / green and clear on the inside.

Plate 52: Part of the runway lighting control panel – as seen in 2010

Plate 53: control cabin looking north-east and looking south (Blg.90)

Plate 54: Control cabin looking south (Blg.90)

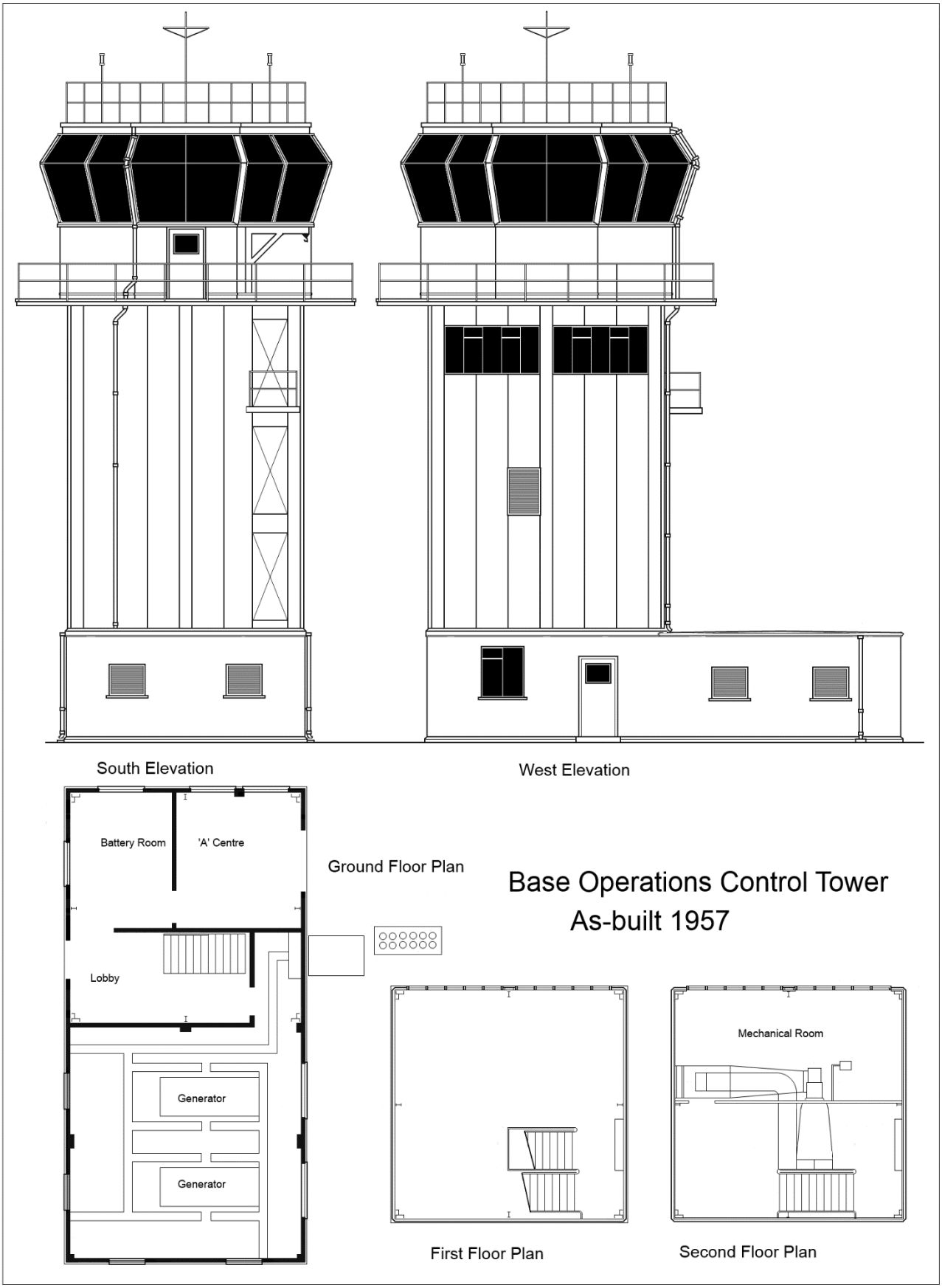
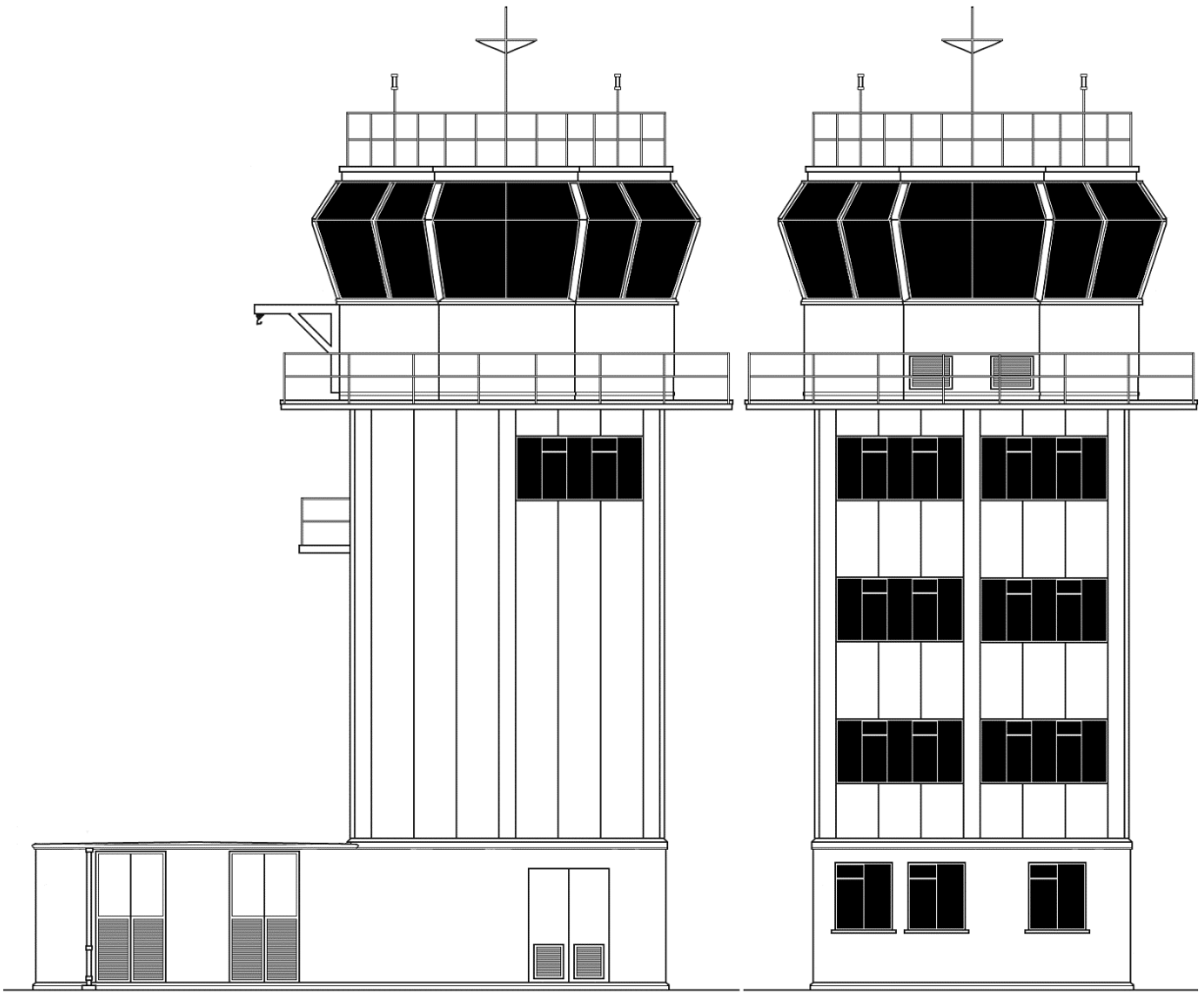


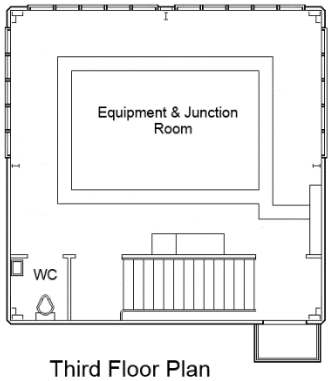
Plate 55 & 56: (over) Plans & elevations (Blg.90)



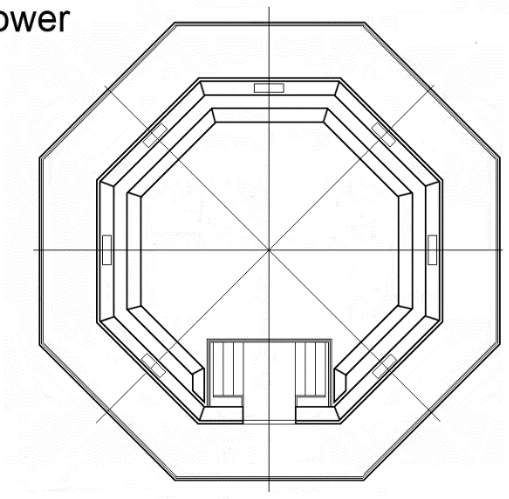
East Elevation

North Elevation

Base Operations Control Tower
As-built 1957



Third Floor Plan



Control Room (Below Sill) Plan

2.8 Building 91: 'B' Centre (Site of Weather Observation Tower)

(a) Weather Observation Tower

A second tower was erected c.1956 to Drawing LET/ALC/1979, called a weather tower it was positioned where the present building 89 is located, which was actually inside the steel framework of the tower. It was constructed of 3in by 7in stanchions braced with 2in angle iron. It carried the cabin and a balcony constructed of timber and boarding at a height of 17ft. The cabin was steel framed clad with Uni-Sco panels and timber glazed windows, the roof was partly asbestos sheeting and glazing panels fixed to the framework. It survived to at least 1977. Note that an earlier tower may have been erected for a short period at the opposite end of building 86.

Plate 57: Weather Observation tower 1964 (Blg.91). Photo: Barry Smith

(b) 'B' Centre

The 'B' centre was also built c.1956, it is a small windowless and cement rendered temporary brick built building with internal piers and a single metal casement window in the north elevation. There are a pair of high level vents, one each on the east and west elevations, only one door which is located in the south elevation. It has a single pitch roof of asbestos sheeting.

'B' centres convert signals from the selected commands from the 'A' centre in the control tower to switch half of the lighting on the instrument runway. There would therefore have been two 'B' centres, the other somewhere to the east of this one.

- NGR: TL 20621 76675 (91)

Plates 58 & 59: 'B' centre (Blg.89)

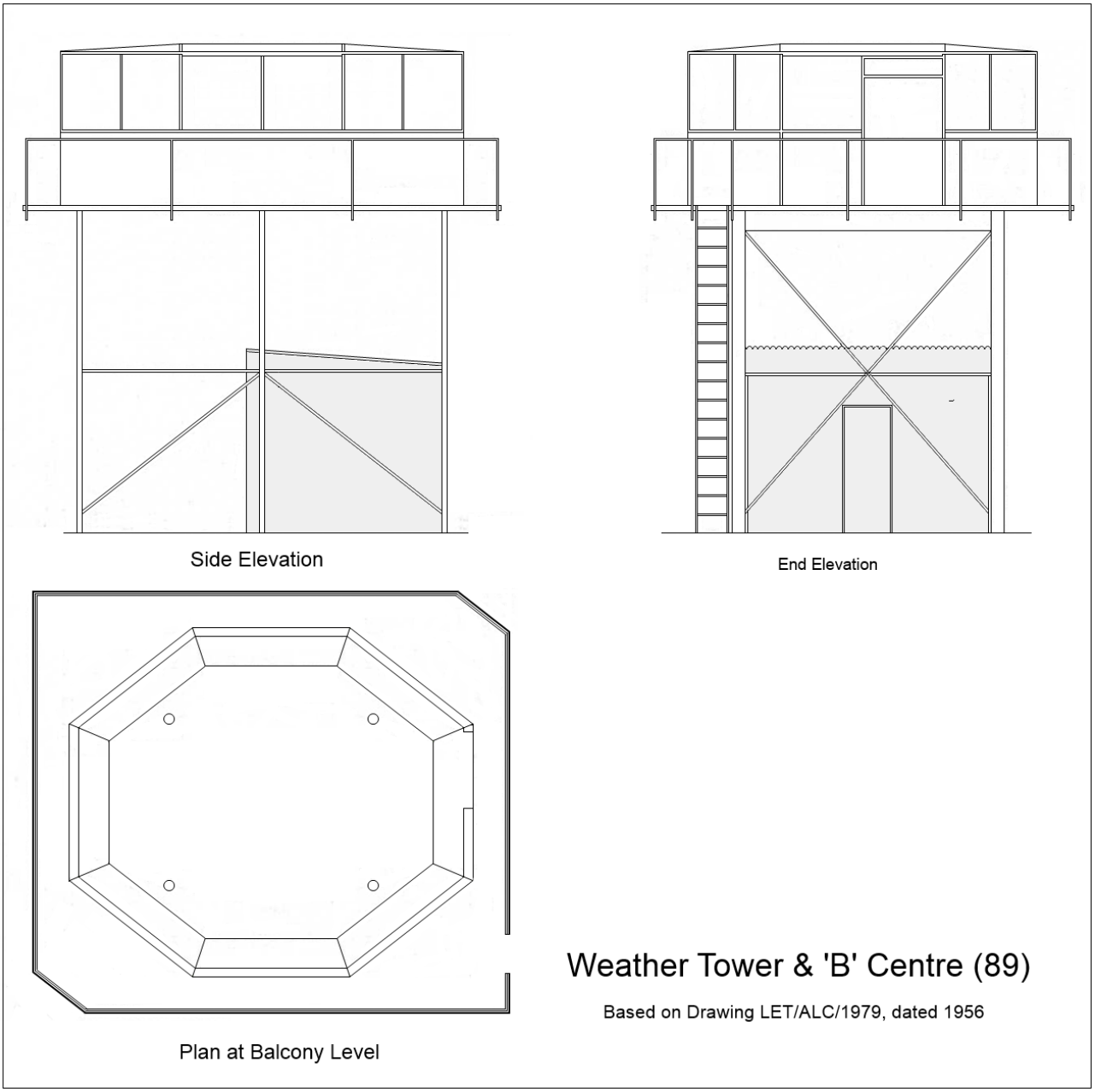


Plate 60: Plan & elevations (91)

Plate 61: Demolition June 2015. Photo Geoff Soden

Sources

The following drawings were consulted in the preparation of this report:

ALC84/1/CLG/5	Building 68
ALC84/1/XDG/7	Building 68
ALC86/83/AB1/1	Building 83
ALC86/85AB1/1	Building 85
M&E ALC/84/63	Building 85
C-30-13-04	Building 86
981/55	Building 86
3512/55	Building 87
4654/55	Building 88
6257/54	Building 88
H&V 4122/56	Building 88
8787/62	Building 88
LET/ALC/2066	Building 88
ALC023/58/R	Building 90
2610A/55	Building 90
LET/ALC/1778	Building 90
LET ALC/1789	Building 90
LET/ALC/1781	Building 90
LET/ALC/1783	Building 90
LET/ALC/1979	Building 91